



IBM Healthcare & Life Sciences

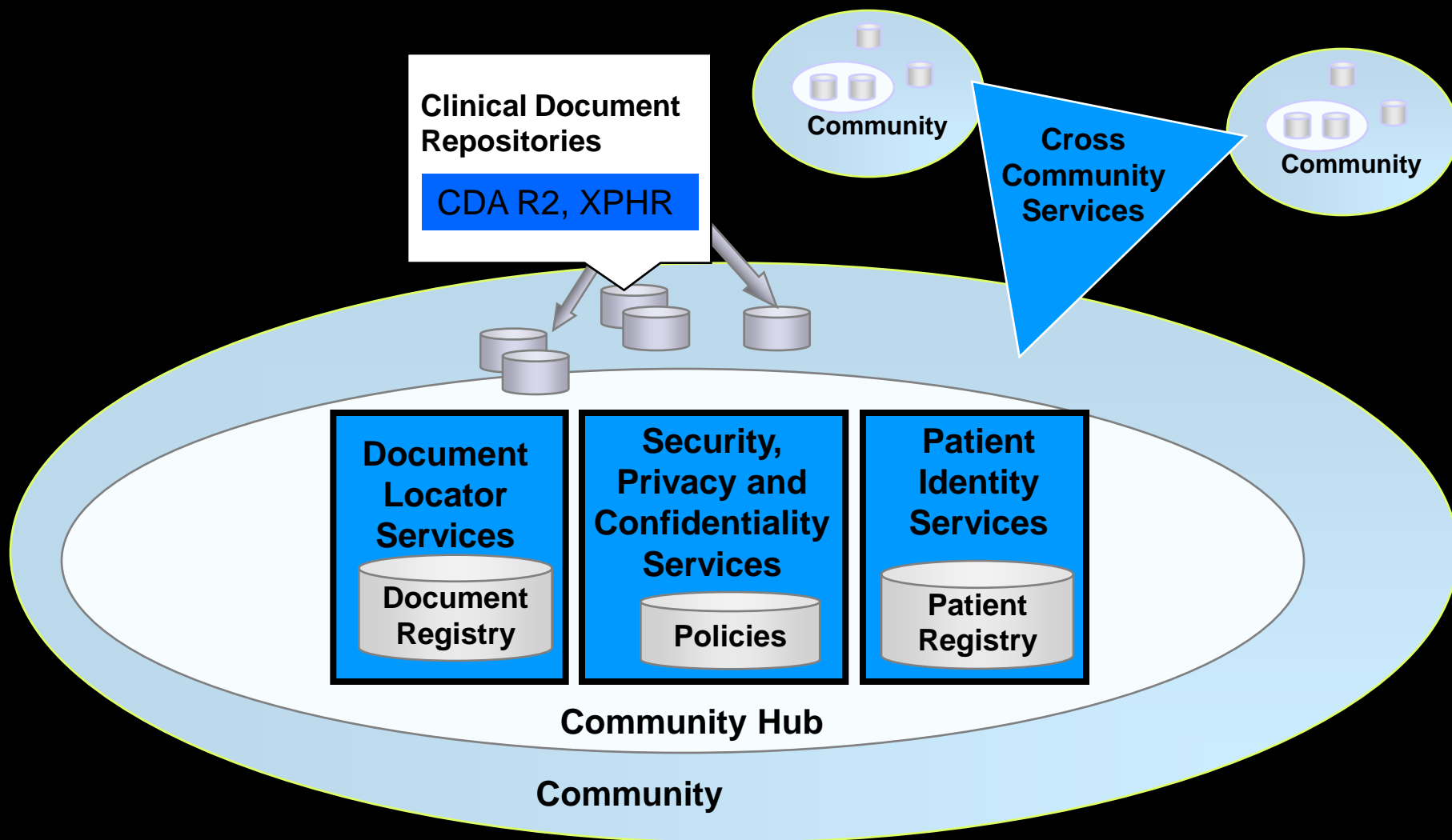
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# *NHIN-enabled Health Information Exchange* (NHIE)

Maryland Task Force – July 9, 2007

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## Model



## Core Services enabled

### Data Services

- Secure data delivery, and confirmation of delivery, to EHRs, PHRs, other systems and networks
- Data look-up, retrieval and data location registries
- Support for notification of the availability of new or updated data
- Audit Logging and error handling for data access and exchange
- Support for secondary use of clinical data including data provisioning and distribution of data transmission parameters
- Data anonymization (including HIPAA de-identification) and re-identification as well as
- ...

### Consumer Services

- Management of consumer identified locations for the storage of their personal health records
- Management of consumer-controlled providers of care and access permissions information
- Management of consumer choices to not participate in network services
- Consumer access to audit logging and disclosure information for PHR and HIE data
- ...

### User Management Services

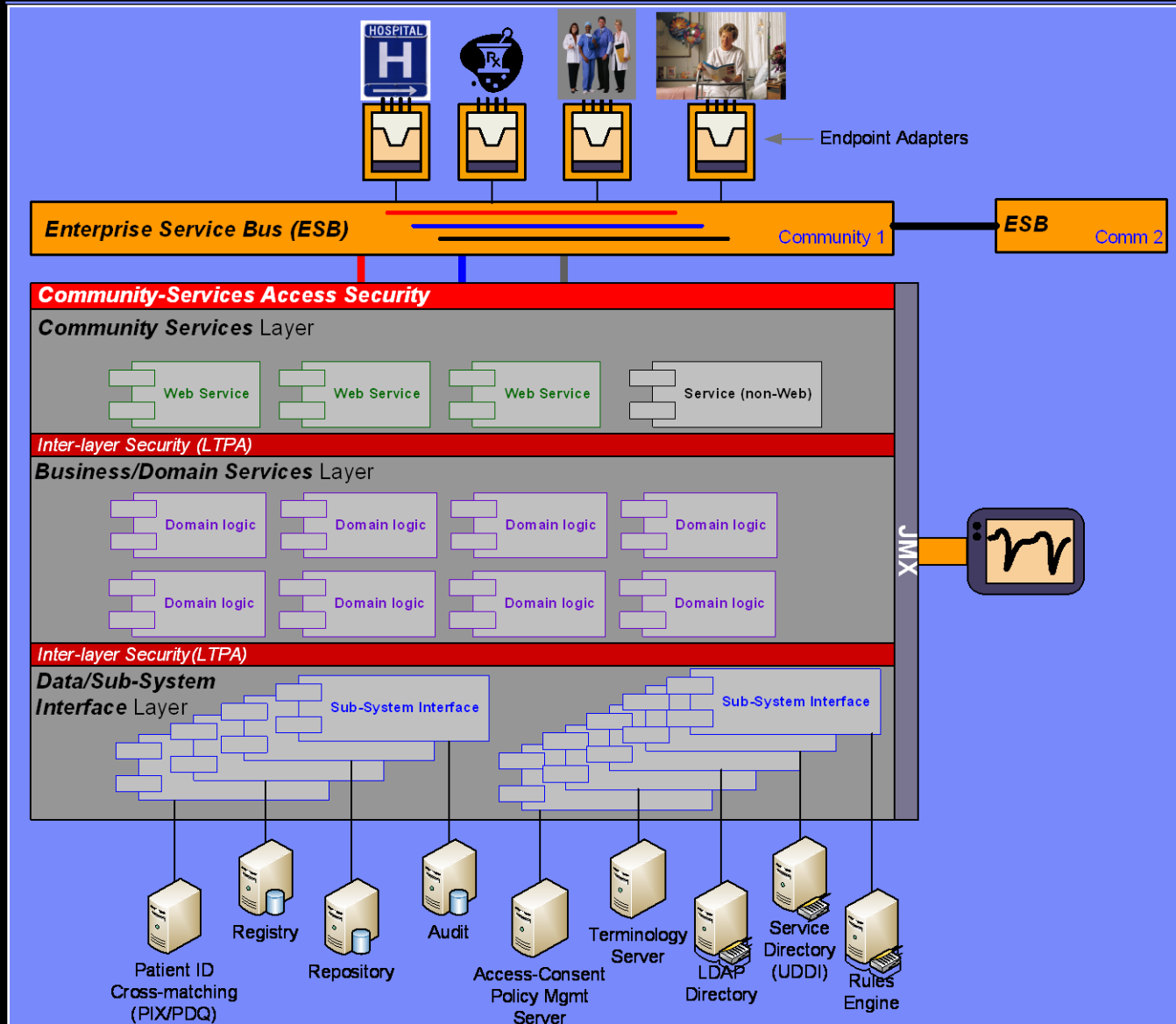
- Identity management (Patients, Providers, Emergency Workers, etc.)
- Federated Authentication
- Role-based authorization
- ...

## Features

- Implements all services required by NHIN-compliant architectures
- Supports (7) AHIC use-cases for NHIN Phase 1 & 2
- Autonomous Community-based; NO CENTRALIZED Services
- NHIN-enabled HIE (NHIE)
- Complementary distributed and/or centralized data storage
- Supersets Industry-Standards
  - Utilizes relevant industry standards at data and transaction levels (HL7, IHE Profiles, SAML, SOAP, LOINC / ICD)
- Flexible & fine-grained, policy-driven **Access-Consent** model
- Terminology mapping to improve and enhance search and data-analysis capabilities
- Configurable and customizable during deployment stages

**Service Oriented Architecture: Flexible, Extensible Scalable, Robust**

# Service Oriented Architecture



- Layered
- *Software Patterns*-driven
  - \* extensive use of Abstract Factory, Factory & Plugin patterns to ensure extensibility/flexibility while maintaining scalable & robust infrastructure.
  - \* Discrete services replaceable without infrastructure impact
- Documented and published interfaces (permits code contribution)
- Flexible, *SOA-based* Inter-Community model
- Inter-Community interface

## Integration Patterns

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Hospitals  
Reference Labs  
EMR & PHR Applications  
Public Health



## Hospitals and Reference Labs

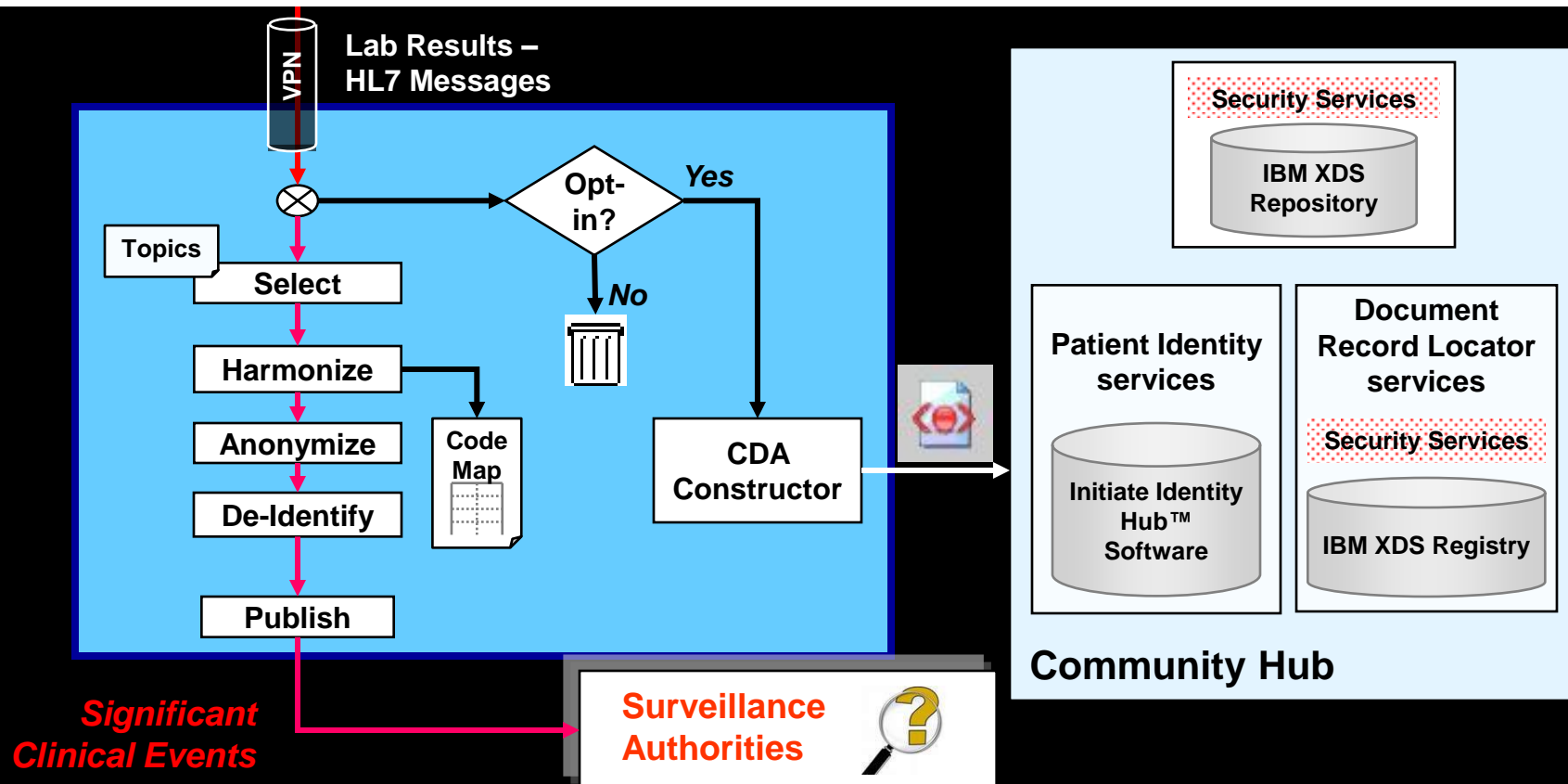
**THINC**

Kingston Hospital  
St. Francis Hospital  
Vassar Brothers Medical Center

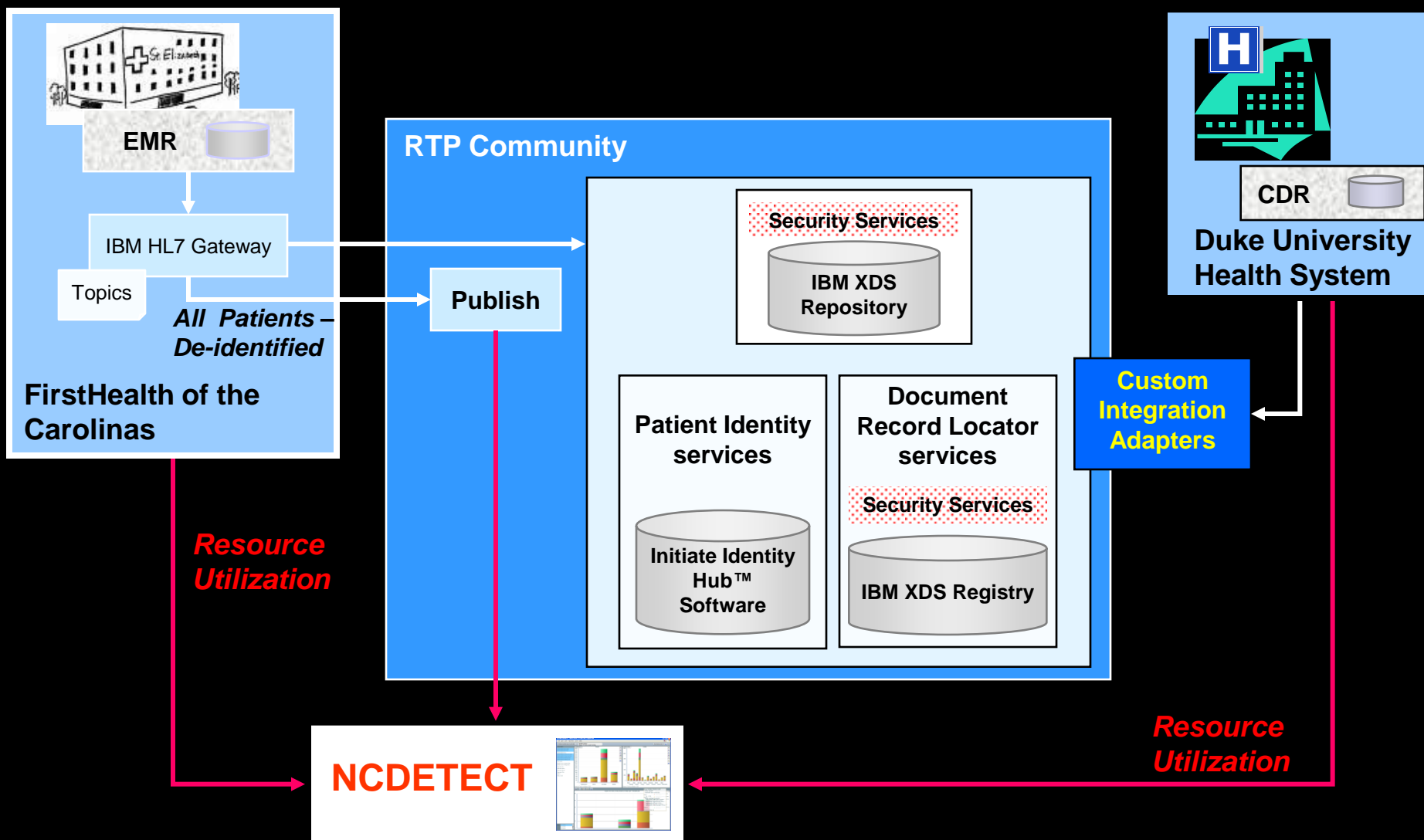
Moses Cone Health System  
Morehead Memorial Hospital



Spectrum Labs  
LabCorp

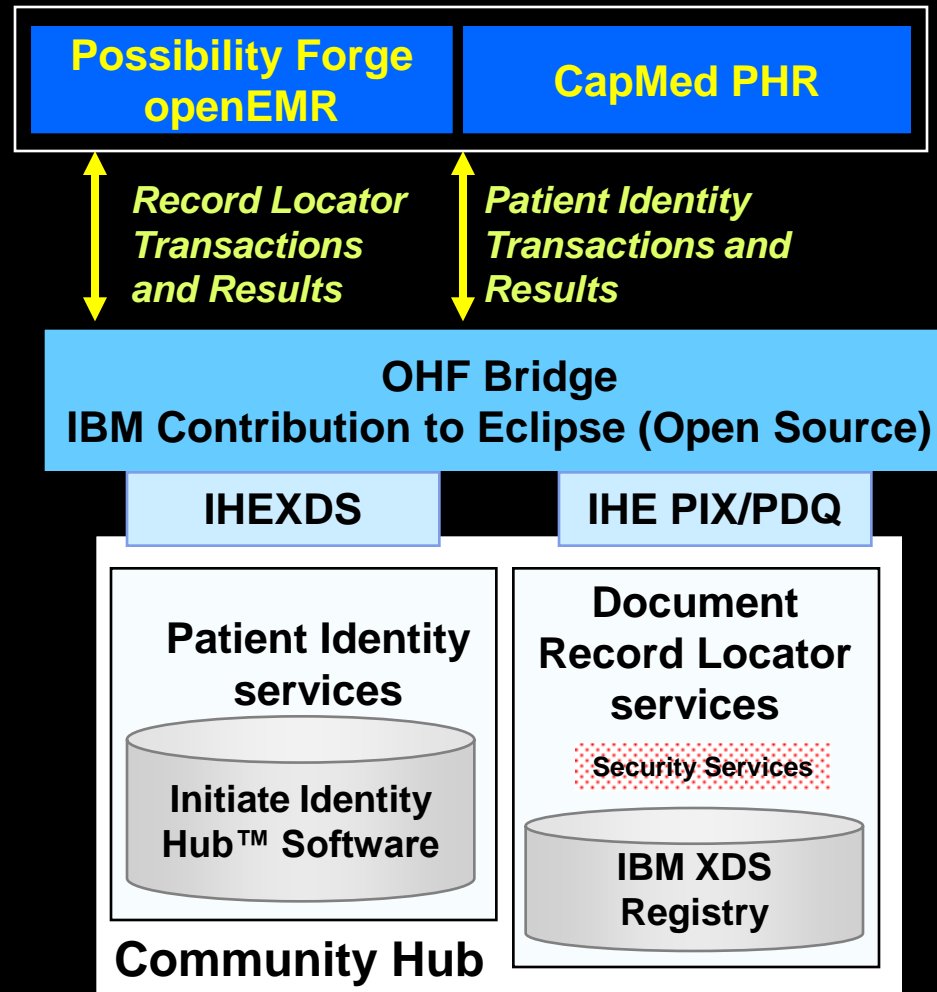


## Hospitals - Variations

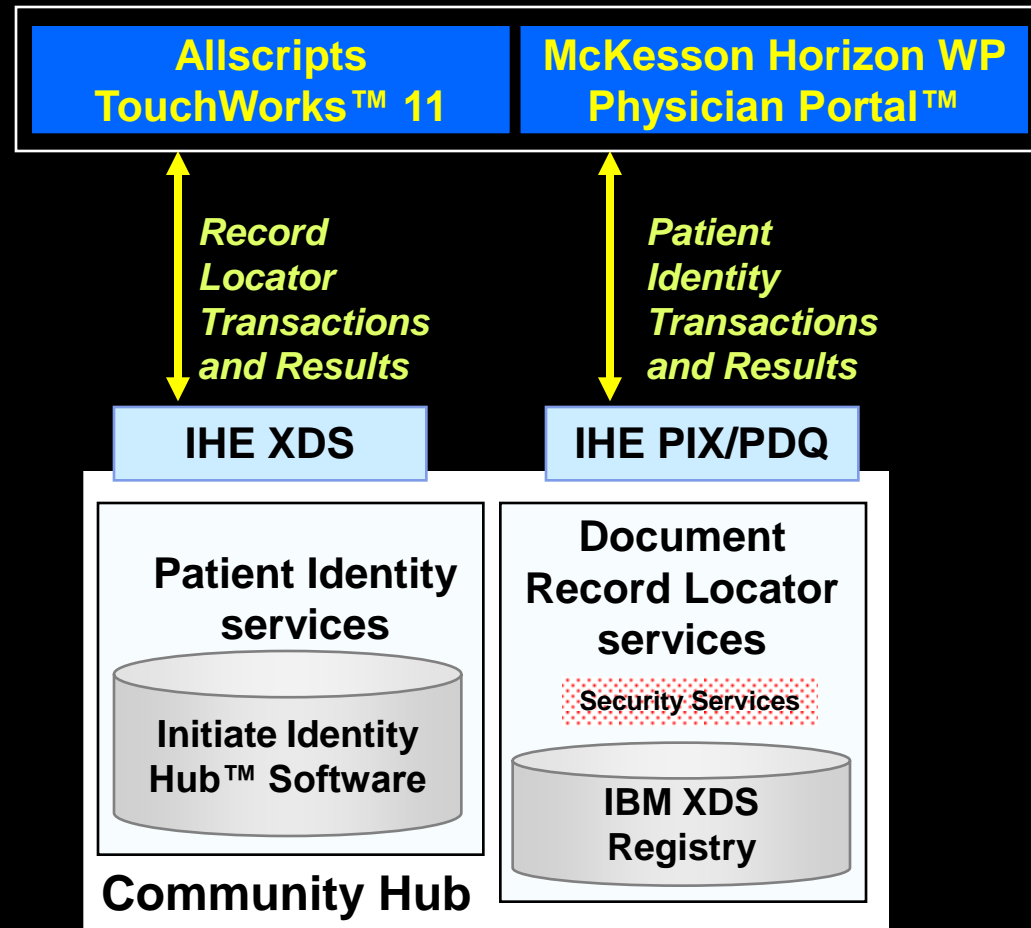




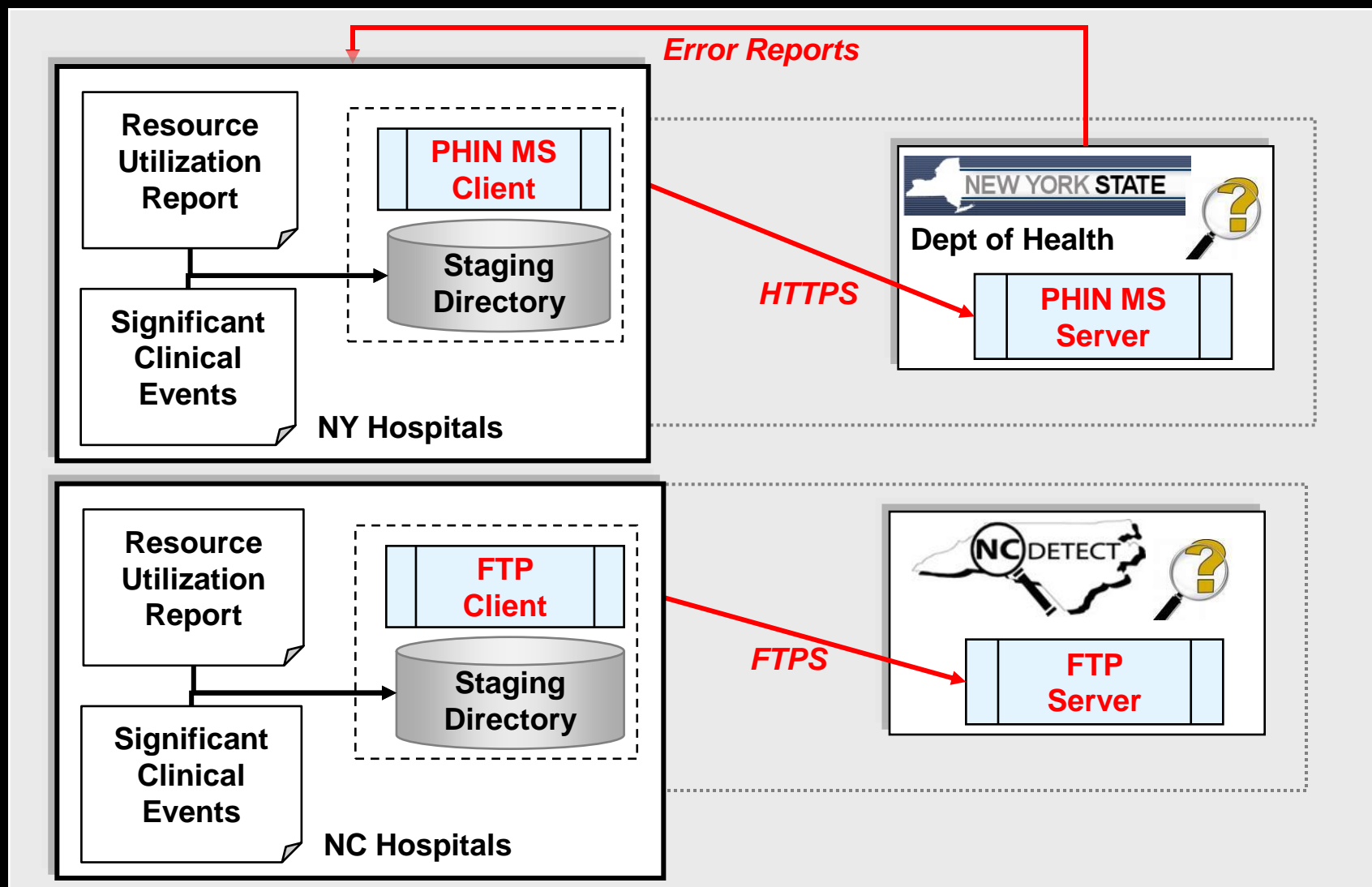
## EMR and PHR Applications – Non-IHE-Compliant



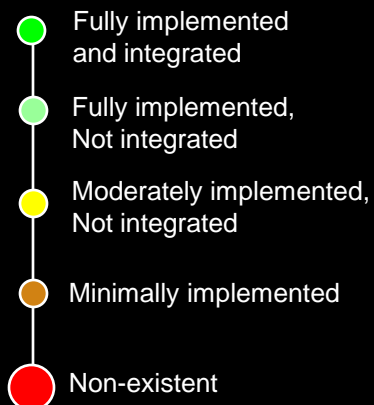
## EMR Applications - IHE-Compliant



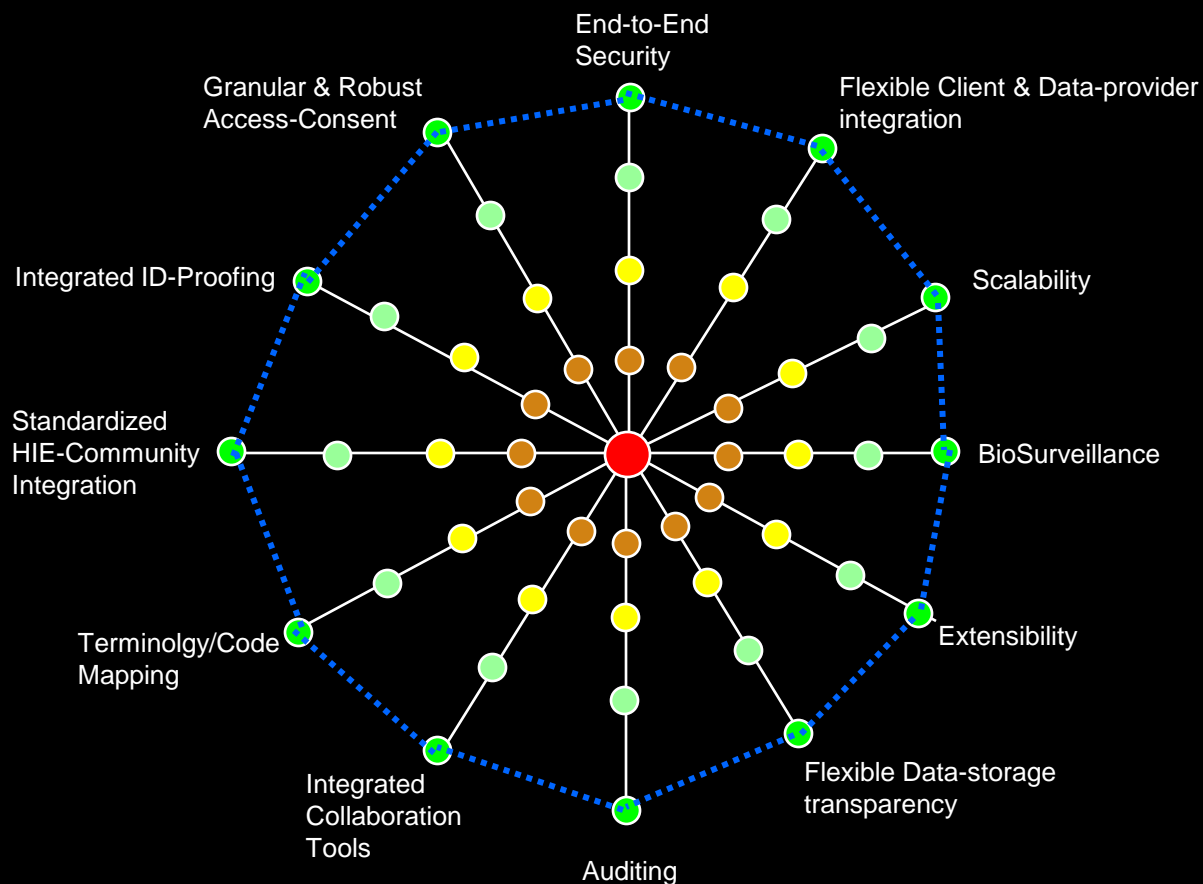
## Public Health



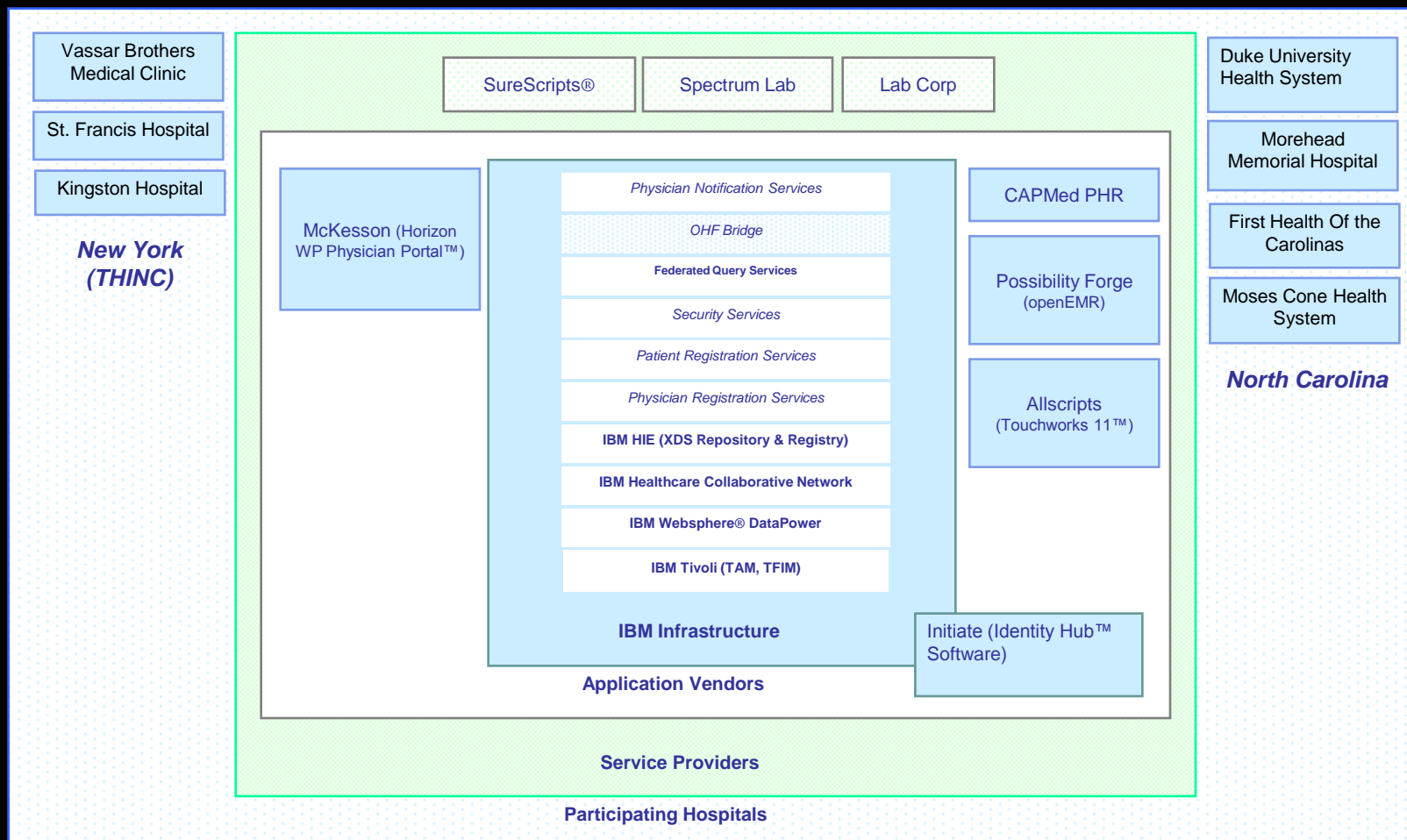
## Architectural Value



IBM provides the **MOST COMPREHENSIVE** solution!



## NHIN Phase 1 Partners



END

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Q / A